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EXAMINER

SWEARINGEN, JEFFREY R

ART UNIT

PAPER NUMBER

2445

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |  |                                    |  |
|------------------------------|--|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/631,264     | <b>Applicant(s)</b><br>SHAH ET AL. |  |
|                              | <b>Examiner</b><br>Jeffrey R. Swearingen | <b>Art Unit</b><br>2445            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2,4-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-2 and 4-31 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: Claim 1 refers both to a sync adaptor and a synch adaptor. For purposes of compact prosecution both are treated as a sync adaptor per the other pending claims, but Applicant should review this terminology for consistency throughout the claims and specification. Additionally, there are references to a sync adapter, which is another spelling present throughout the claims and specification. The Office suggests Applicant select one spelling for consistency throughout the application. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2 and 4-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa et al. (US 7,222,172) in view of Rabe et al. (US 7,506,040).
5. Based on the current claims and a review of the specification, the Snapshot function of Arakawa is almost identically analogous to Applicant's claimed invention as described in the specification. Specification [019], [024]

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6. In regard to claim 1, Arakawa disclosed *in a computing sync community, a system for synchronizing multiple replicas in the sync community, the system comprising:*

*a computer processor executing a sync runtime module that provides services to one or more sync adapters, wherein the services provided by the sync runtime module to each of the one or more sync adapters include a change enumeration service that compares a first knowledge of a first replica with a second knowledge of a second replica to enumerate changes that are described by the second knowledge and absent from the first knowledge;* Arakawa, column 8, line 46 – column 9, line 25. Snapshot function

*a first data store containing a first replica for synchronization with one or more additional data stores, wherein the first data store further contains a first knowledge of the first replica, the first knowledge comprising information describing a set of changes to the first replica and the first knowledge being independent from changes to other replicas;* Arakawa, column 8, line 46 – column 9, line 25. Snapshot function

*one or more sync adaptors, each of the one or more synch adaptors being configured to synchronize the first replica of the first data store with a second replica of a particular data store;* Arakawa, column 8, line 46 – column 9, line 25. Snapshot function

*a particular data store containing the second replica to be synchronized with the first replica, wherein the particular data store further contains a second knowledge of the second replica, the second knowledge comprising information describing a set of*

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*changes to the second replica and the second knowledge being independent from changes to other replicas; and Arakawa, column 8, line 46 – column 9, line 25.*

Snapshot function

*a sync controller that instantiates a particular sync adapter such that the particular sync adapter utilizes the services provided by the sync runtime module to synchronize the first replica in the sync community with the second replica utilizing the first knowledge and the second knowledge. Arakawa, column 8, line 46 – column 9, line 25. Snapshot function*

Arakawa disclosed detection of changes in the files of the various volumes, but did not disclose further changes in the storage area network (*sync community*). Rabe disclosed a SAN access layer engine. The SAN access layer engine monitored the SAN for objects that are added or removed. Objects in Rabe further included the addition and removal of various storage volumes. Rabe, column 16, lines 9-25. It would have been obvious to one of ordinary skill in the art at the time of invention that Arakawa's snapshot synchronization of two drives could also be applied to other device changes in a broader area SAN as taught in Rabe, to allow for further detection of changes in storage volume labels and settings beyond just the file detection taught in Arakawa.

7. In regard to claim 2, Arakawa further disclosed *the services provided by the sync runtime module are accessed by the one or more sync adapters using an applications programming interface.*

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8. In regard to claim 4, Arakawa further disclosed *the services further comprises a conflict detection service that uses the first knowledge of the first replica and the second knowledge of the second replica to detect conflicts*. Arakawa, column 8, line 46 – column 9, line 25. Snapshot function

9. In regard to claim 5, Arakawa further disclosed *the conflict detection service detects a conflict when a change enumerated by the first replica is not in the second knowledge of the second replica and a change enumerated by the second replica is not in the first knowledge of the first replica*. Arakawa, column 8, line 46 – column 9, line 25. Snapshot function

10. In regard to claim 6, Arakawa further disclosed *the conflict detection service further comprises a conflict resolution module*. Arakawa, column 8, line 46 – column 9, line 25. Snapshot function

11. In regard to claim 7, Arakawa further disclosed *the conflict resolution module can implement a conflict policy identified in a profile or included in a pluggable conflict resolution module*. Arakawa, column 8, line 46 – column 9, line 25. Snapshot function

12. In regard to claim 8, Arakawa further disclosed *a profile that includes one or more parameters, wherein the sync controller configures the particular sync adapter using the one or more parameters in the profile*. Arakawa, column 8, line 46 – column 9, line 25. Snapshot function

13. In regard to claim 9, Arakawa further disclosed *the profile identifies one or more of:*

*a first source folder of the first replica;*

*a first destination folder of the first replica;*  
*a second source folder of the second replica;*  
*a second destination folder of the second replica;*  
*a first filter to filter changes that are enumerated at the first replica;*  
*a second filter to filter changes retrieved from the second replica;*  
*a transformation for converting an item from the second replica to a format of the first replica; and*

*a conflict resolution policy.* Resynchronization in Snapshot function – column 9, line 14; column 9, lines 55-64

14. In regard to claim 10, Arakawa further disclosed *the services further comprises one or more of:*

15. *an item ID matching service, wherein second item IDs of the second replica are provided by the particular adapter during a receive sync and first item IDs of the first replica are provided by the sync runtime module during a send sync;* column 8, line 46 – column 9, line 25. Snapshot function

*a sync interruptability service that includes exceptions in a remote knowledge;*  
*and* column 9, lines 4-10 – pair separation

*a service that prevents changes from reflecting to and from the first replica.*  
column 9, lines 4-10 – pair separation

16. In regard to claim 12, Arakawa further disclosed *the sync metadata management service stores a local knowledge used by the particular adapter.* column 8, line 46 – column 9, line 25. Snapshot function

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17. In regard to claim 13, Arakawa further disclosed *a method for synchronizing a replica with one or more back end replicas, the method comprising:*

*initiating a particular adapter using one or more parameters included in a sync profile, wherein the particular adapter uses the one or more parameters, a first knowledge related to a first replica, and a second knowledge related to a second replica to synchronize the first replica with the second replica;* column 8, line 46 – column 9, line 25. Snapshot function

*receiving a request from the particular adapter to enumerate changes on the first replica by comparing the first knowledge of the first replica with the second knowledge of the second replica to identify changes that are described by the first knowledge and absent from the second knowledge, wherein the knowledge of a replica comprises information describing a set of changes to a replica that the given replica is aware of and independent from other replicas;* column 8, line 46 – column 9, line 25. Snapshot function

*enumerating changes on the first replica by comparing the first knowledge of the first replica with the second knowledge of the second replica and identifying changes described in the first knowledge and absent from the second knowledge;* column 8, line 46 – column 9, line 25. Snapshot function

*detecting conflicts by determining whether a change enumerated by the first replica is included in the second knowledge of the second replica and whether the change at the second replica is included in the first knowledge of the first replica; and*



*sending changes enumerated at the first replica to the second replica.* column 8, line 46  
– column 9, line 25. Snapshot function

Arakawa disclosed detection of changes in the files of the various volumes, but did not disclose further changes in the storage area network (*sync community*). Rabe disclosed a SAN access layer engine. The SAN access layer engine monitored the SAN for objects that are added or removed. Objects in Rabe further included the addition and removal of various storage volumes. Rabe, column 16, lines 9-25. It would have been obvious to one of ordinary skill in the art at the time of invention that Arakawa's snapshot synchronization of two drives could also be applied to other device changes in a broader area SAN as taught in Rabe, to allow for further detection of changes in storage volume labels and settings beyond just the file detection taught in Arakawa.

18. In regard to claim 14, Arakawa further disclosed *initiating the particular adapter using the one or more parameters included in the sync profile further comprises defining the sync profile.* column 8, line 46 – column 9, line 25. Snapshot function

19. In regard to claim 15, Arakawa further disclosed *defining the sync profile further comprises one or more of:*

*specifying a sync direction;*

*identifying the particular adapter;*

*identifying a first source folder and a first destination folder on the first replica;*

*identifying a second source folder and a second destination folder on the second replica; and*

*including a conflict policy. Resynchronization in Snapshot function – column 9, line 14; column 9, lines 55-64*

20. In regard to claim 16, Arakawa further disclosed *receiving the request from the particular adapter to enumerate changes on the first replica by comparing the knowledge of the first replica with the knowledge of the second replica further comprises receiving the request for a service provided by a sync runtime. column 8, line 46 – column 9, line 25*

21. In regard to claim 17, Arakawa further disclosed *receiving the request for the service provided by the sync runtime further comprises providing the requested service. column 8, line 46 – column 9, line 25*

22. In regard to claim 18, Arakawa further disclosed *providing the requested service further comprises managing sync metadata by performing one or more of:*

*storing a state of the synchronization for the particular adapter; column 8, line 46 – column 9, line 25*

*storing local knowledge for the second replica; and column 8, line 46 – column 9, line 25*

*storing a remote knowledge of the second replica. column 8, line 46 – column 9, line 25*

23. In regard to claim 19, Arakawa further disclosed *providing the requested service further comprises mapping a first item ID of the first replica with a second item ID of the second replica, wherein the particular adapter provides the second item ID of the*

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*second replica in a receive sync and wherein the sync runtime provides the second item ID of the second replica during a send sync.* column 8, line 46 – column 9, line 25

24. In regard to claim 20, Arakawa further disclosed *providing the requested service further comprises including exceptions in a remote knowledge such that items corresponding to the exceptions are not synchronized in future synchronizations.*

Column 9, lines 3-11 – pair separation of the two volumes

25. In regard to claim 21, Arakawa further disclosed *preventing a change from being reflected between the first replica and the second replica using the first knowledge of the first replica and the second knowledge of the second replica.* Column 9, lines 3-11 – pair separation of the two volumes

In regard to claim 22, Arakawa further disclosed *receiving changes enumerated by the second replica; applying changes enumerated by the second replica at the first replica; and updating the knowledge of the first replica.* column 8, line 46 – column 9, line 25

26. Claim 23 is substantially the same as claims 13 and 22.

27. Claim 24 is substantially the same as claim 14.

28. Claim 25 is substantially the same as claim 15.

29. Claim 26 is substantially the same as claim 16.

30. Claim 27 is substantially the same as claim 17.

31. Claim 28 is substantially the same as claim 18.

32. Claim 29 is substantially the same as claim 19.

33. Claim 30 is substantially the same as claim 20.

34. Claim 31 is substantially the same as claim 21.

***Conclusion***

35. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. Swearingen whose telephone number is (571)272-3921. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeffrey R. Swearingen  
Examiner  
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